



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,621	03/29/2004	Chien-Hsueh Shih	67,200-1168	2719
7590 TUNG & ASSOCIATES Suite 120 838 W. Long Lake Road Bloomfield Hills, MI 48302			EXAMINER WONG, EDNA	
			ART UNIT 1795	PAPER NUMBER
			MAIL DATE 12/04/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/811,621

Applicant(s)

SHIH ET AL.

Examiner

EDNA WONG

Art Unit

1795

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4-7, 9, 12, 13 and 21-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-7, 9, 12, 13 and 21-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

This is in response to the Amendment dated October 30, 2008. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

Response to Arguments

Claim Rejections - 35 USC § 112

Claims **1-2, 4-7, 9, 12-13 and 21-24** have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The rejection of claims 1-2, 4-7, 9, 12-13 and 21-24 under 35 U.S.C. 112, second paragraph, has been withdrawn in view of Applicants' amendment.

Claim Rejections - 35 USC § 102/103

I. Claims **1-2, 4-6 and 21-22** have been rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Meine et al.** (US Patent No. 6,689,223 B1).

The rejection of claims 1-2, 4-6 and 21-22 under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Meine et al. has been withdrawn in view of Applicants' remarks.

II. Claims **9, 12 and 23-24** have been rejected under 35 U.S.C. 102(e) as

anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Meine et al.** (US Patent No. 6,689,223 B1).

The rejection of claims 9, 12 and 23-24 under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Meine et al.** has been withdrawn in view of Applicants' remarks.

Claim Rejections - 35 USC § 103

I. Claim **7** has been rejected under 35 U.S.C. 103(a) as being unpatentable over **Meine et al.** (US Patent No. 6,689,223 B1) as applied to claims 1-2, 4-6 and 21-22 above.

The rejection of claim 7 under 35 U.S.C. 103(a) as being unpatentable over **Meine et al.** as applied to claims 1-2, 4-6 and 21-22 above has been withdrawn in view of Applicants' remarks.

II. Claim **13** has been rejected under 35 U.S.C. 103(a) as being unpatentable over **Meine et al.** (US Patent No. 6,689,223 B1) as applied to claims 9, 12 and 23-24 above.

The rejection of claim 13 under 35 U.S.C. 103(a) as being unpatentable over **Meine et al.** as applied to claims 9, 12 and 23-24 above has been withdrawn in view of Applicants' remarks.

Response to Amendment

Claim Objections

Claim 9 is objected to because of the following informalities:

Claim 9

line 8, the word -- is -- should be inserted after the word "polymer".

line 10, the word -- is -- should be inserted after the word "acid".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

I. Claims **1-2, 4-7, 9, 12-13 and 21-24** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1

lines 14-15, recites "said electrolyte bath further comprising an anode".

Applicants' specification does not disclose that the formulation of the electroplating bath solution comprises an anode (page 13-14, [0032]). Applicants' specification discloses that the electrochemical plating (ECP) system comprises an

anode (pages 12-13, [0030]).

Claim 9

lines 17-18, recites "said electrolyte bath further comprising an anode".

Applicants' specification does not disclose that the formulation of the electroplating bath solution comprises an anode (page 13-14, [0032]). Applicants' specification discloses that the electrochemical plating (ECP) system comprises an anode (pages 12-13, [0030]).

The Examiner has carefully considered the entire specification as originally filed, however, there is found no literal support in the specification for these limitations in claims 1 and 9. Applicants have not provided the page number and line numbers from the specification as to where the newly added limitations are coming from. *Ex parte Grasselli*, 231 USPQ 393 (Bd. App. 1983) *aff'd mem.* 738 F.2d 453 (Fed. Cir. 1984).

II. Claims **1-2, 4-7, 9, 12-13 and 21-24** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1

line 1, recites "An electrolyte bath".

The claim language is unclear to the Examiner as to whether the present

invention is a solution (formulation/ composition) or an apparatus.

It is suggested that "An electrolyte bath" be amended to -- An electrolyte bath solution -- (see Applicants' specification, pages 13-14, [0032]) for claiming a solution invention; or be amended to -- An electrochemical plating (ECP) system -- (see Applicants' specification, pages 12-13, [0030]) for claiming an apparatus invention.

Amending the preamble of claim 1 to such would leave no possibility for any other interpretation of Applicants' claims since it is well settled that unpatented claims are given the broadest, most reasonable interpretation.

line 8, recites "disposed as".

This claim language denotes a process limitation. Since the present invention is a solution (formulation/ composition) or an apparatus, it is suggested that these words be deleted.

lines 15-16, "said metal electroplating" lacks antecedent basis.

Claim 9

line 1, recites "An electrolyte bath".

The claim language is unclear to the Examiner as to whether the present invention is a solution (formulation/ composition) or an apparatus.

It is suggested that "An electrolyte bath" be amended to -- An electrolyte bath

solution -- (see Applicants' specification, pages 13-14, [0032]) for claiming a solution invention; or be amended to -- An electrochemical plating (ECP) system -- (see Applicants' specification, pages 12-13, [0030]) for claiming an apparatus invention.

Amending the preamble of claim 9 to such would leave no possibility for any other interpretation of Applicants' claims since it is well settled that unpatented claims are given the broadest, most reasonable interpretation.

line 12, recites "disposed as".

This claim language denotes a process limitation. Since the present invention is a solution (formulation/ composition) or an apparatus, it is suggested that these words be deleted.

lines 18-19, "said copper electroplating" lacks antecedent basis.

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The Examiner has examined the present invention as a solution (formulation/ composition) invention until it is clear in the present claims that the present invention is otherwise (see Claim Rejections - 35 USC § 112).

I. Claims **1-2, 4-7 and 21-22** are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Meine et al.** (US Patent No. 6,689,223 B1) and **INEOS Oxide** (www.ineosoxide.com, pp. 1-4).

Meine teaches an electrolyte bath, comprising:

(a) a metal (= an alkali metal and alkali earth metal halide) [col. 7, lines 50-63] electroplating electrolyte solution (= a lower aqueous **phase I**) [col. 2, lines 16-20]; and

(b) a composition (= an upper aqueous **phase II**) [col. 2, lines 16-20] comprising an organic acid (= citric acid) [col. 2, line 28] and a non-ionic polymer mixed with said organic acid (col. 2, lines 25-30), said non-ionic polymer selected from the group consisting of an alkoxyated alcohol (= a C₁₀₋₁₄ fatty alcohol + 1 PO + 1 EO ether) [col. 2, lines 25-27], an alkoxyated amine (= ethoxylates of alkyl amines) [col. 5, lines 10-15], and an alkylphenol alkoxyate;

wherein said composition is disposed as a suspended layer within said electrolyte solution (= one or more continuous phases of a composition may also contain parts of another phase in emulsified form so that, in a composition such as this, phase I for example is partly present as continuous phase I, which represents the lower continuous phase of the composition, and **is partly emulsified as discontinuous phase I in the upper continuous phase II**) [col. 3, lines 10-22], said suspended layer of sufficient dimension to form a wetting layer on a substrate (= the dimension of the discontinuous phase I).

The organic acid is selected from the group consisting of citric acid and acetic acid (= citric acid) [col. 2, line 28].

The composition is present in said electrolyte solution in a concentration of about 5% by weight (= particularly preferred compositions are those in which phase I is emulsified into phase II in quantities of 0.1 to 25% by volume and preferably in quantities of 0.2 to 15% by volume, based on the volume of phase II) [col. 3, lines 26-36; and col. 17, claims 4 and 5].

The non-ionic polymer has a molecular weight of less than 1,000 (= a C₁₀₋₁₄ fatty alcohol + 1 PO + 1 EO ether) [col. 2, lines 25-27].

The non-ionic polymer is present in said composition in a quantity of from about 0.5 to about 10 wt.% (= 0.01 to 30% by weight) [col. 3, line 63 to col. 4, line 10].

The organic acid is present in said composition in a quantity of from about 2 to about 20 wt.% (col. 2, line 28; and col. 16, Table 1).

The non-ionic polymer is present in said composition in a wt.% of about 5 (= 0.01 to 30% by weight) [col. 3, line 63 to col. 4, line 10].

The bath of Meine differs from the instant invention because Meine does not disclose the following:

a. Wherein said electrolyte solution is contained in an electrolyte bath container, as recited in claim 1.

The invention as a whole would have been anticipated and/or obvious to one having ordinary skill in the art at the time the invention was made because the container is not a chemical structure of the bath and does not compositionally distinguish the bath from the prior art (MPEP § 2112(III)).

Furthermore, Meine teaches that the present invention relates to an aqueous, liquid, multiphase, surfactant-containing cleaning composition with at least two continuous phases which comprises at least one lower aqueous phase I and an upper aqueous phase II immiscible with the lower phase I, which can be temporarily converted into an emulsion by shaking (col. 2, lines 16-21). One having ordinary skill in the art can reasonably conclude that the composition was contained in a bath container if it was to be shaken.

b. Wherein said suspended layer spans said electrolyte solution bath container, as recited in claim 1.

The invention as a whole would have been anticipated and/or obvious to one having ordinary skill in the art at the time the invention was made because the composition disclosed by Meine is an aqueous, liquid, multiphase, surfactant-containing cleaning composition with at least two continuous phases which comprises at least one lower aqueous phase I and an upper aqueous phase II immiscible with the lower phase I (col. 2, lines 16-20). The aqueous phases I and II are liquids, and liquids naturally have the ability to flow and to take on the shape of a container.

c. To form a wetting layer on a substrate as said substrate is passed through said suspended layer into said electrolyte solution, as recited in claim 1.

The invention as a whole would have been anticipated and/or obvious to one having ordinary skill in the art at the time the invention was made because the intended result of a process step does not compositionally distinguish the bath from the prior art (MPEP § 2112(III)).

d. Wherein said electrolyte bath further comprises an anode to carry out said metal electroplating in said electrolyte solution on said substrate comprising said wetting layer, as recited in claim 1.

The invention as a whole would have been anticipated and/or obvious to one having ordinary skill in the art at the time the invention was made because the anode does not compositionally distinguish the bath from the prior art (MPEP §

2112(III)). How does the anode formulate the bath solution?

e. Wherein said organic acid is present in said composition in a wt.% of about 10, as recited in claim 7.

Meine teaches citric acid concentrations of 3.0, 4.0, 5.5, 7.0, 8.0 and 8.5 (col. 2, line 28; and col. 16, Table 1).

The invention as a whole would have been anticipated and/or obvious to one having ordinary skill in the art at the time the invention was made because:

(i) The word "about" permits some tolerance or flexibility to the claimed range. *In re Ayers* 69 USPQ 109 and *In re Erickson* 145 USPQ 207. MPEP § 2173.05(b)(A).

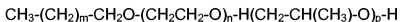
(ii) In the case where the claimed ranges overlap or lie inside ranges disclosed by the prior art, a *prima facie* case of obviousness exists (MPEP § 2144.05(I)).

(iii) A *prima facie* case of obviousness exists where claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties (MPEP § 2144.05(I)).

(iv) It has been held that changes in temperature, concentration or both, is not a patentable modification; however, such changes may impart patentability to a process if the ranges claimed produce new and unexpected results which are different in kind and not merely in degree from results of the prior art, such ranges are termed "critical"

ranges and Applicant has the burden of proving such criticality; even though Applicant's modification results in great improvement and utility over the prior art, it may still not be patentable if the modification was within capabilities of one skilled in the art; more particularly, where general conditions of the claim are disclosed in the prior art, it is not inventive to discover optimum or workable ranges by routine experimentation. *In re Aller*, 220 F2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) and MPEP § 2144.05.

INEOS Oxide is further evidence that the C₁₀₋₁₄ fatty alcohol + 1 PO + 1 EO ether disclosed by Meine (col. 2, lines 25-27) is an alkoxylated alcohol and such chemical structure has a molecular weight of less than 1,000. INEOS teaches that natural fatty alcohol alkoxylates: C₁₂-C₁₆ alkoxylates are low-foaming non-ionic surfactants having the chemical structure:



$$m = 10-14, n = 2-19, p = 0-10$$

(pages 3-4, "Alcohol ethoxylates").

II. Claims **9, 12-13 and 23-24** are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Meine et al.** (US Patent No. 6,689,223 B1) and **INEOS Oxide** (www.ineosoxide.com, pp. 1-4).

Meine and INEOS are as applied for the reasons as discussed above and incorporated herein.

III. Claims **1, 4, 21 and 22** are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Bokisa** (US Patent No. 6,676,823 B1).

Bokisa teaches an electrolyte bath, comprising:

(a) a metal electroplating electrolyte solution (= a copper plating bath) [col. 3, lines 9-18], said electrolyte solution contained in an electrolyte bath container (col. 7, line 8); and

(b) a composition comprising an organic acid (= alkane sulfonic acids) [col. 4, lines 46-53] and a non-ionic polymer mixed with said organic acid, said non-ionic polymer selected from the group consisting of an alkoxyated alcohol, an alkoxyated amine (= alkoxyates amine surfactants) [col. 6, lines 20-21], and an alkylphenol alkoxyate,

said electrolyte bath further comprising an anode (col. 7, line 12) to carry out a metal electroplating in said electrolyte solution (col. 6, line 61 to col. 7, line 11) on a substrate (col. 2, lines 51-65).

The composition is present in said electrolyte solution in a concentration of about 5% by weight (= about 15 g/l to 325 g/l of one or more supplemental acids + about 10 ppb to 5 g/l of one or more additives/brighteners) [col. 4, lines 14-15; and col. 5, lines 12-19].

The non-ionic polymer is present in said composition in a quantity of from about 0.5 to about 10 wt.% (= about 10 ppb to 5 g/l of one or more additives/brighteners) [col.

5, lines 12-19].

The organic acid is present in said composition in a quantity of from about 2 to about 20 wt.% (= about 15 g/l to 325 g/l of one or more supplemental acids) [col. 4, lines 14-15].

The bath of Bokisa differs from the instant invention because Bokisa does not disclose the following:

a. Wherein said composition is disposed as a suspended layer within said electrolyte solution, said suspended layer of sufficient dimension to form a wetting layer on a substrate as said substrate is passed through said suspended layer into said electrolyte solution, as recited in claim 1.

The invention as a whole would have been anticipated and/or obvious to one having ordinary skill in the art at the time the invention was made because the intended result of a process step does not compositionally distinguish the bath from the prior art (MPEP § 2112(III)).

Furthermore, if the composition is physically the same, it must have the same properties. Products of identical chemical composition can not have mutually exclusive properties. A chemical composition and its properties are inseparable (MPEP § 2112.01(II)).

b. Wherein said suspended layer spans said electrolyte solution bath

container, as recited in claim 1.

The invention as a whole would have been anticipated and/or obvious to one having ordinary skill in the art at the time the invention was made because the bath disclosed by Bokisa is an aqueous solution (col. 2, lines 66-67). Aqueous solutions naturally have the ability to flow and to take on the shape of a container.

IV. Claims **1-2, 4-7 and 21-22** are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Motoki et al.** (US Patent No. 6,911,138 B2).

Motoki teaches an electrolyte bath, comprising:

(a) a metal electroplating electrolyte solution (= a tin plating bath) [col. 3, lines 48-50], said electrolyte solution contained in an electrolyte bath container (= a plating barrel) [col. 5, lines 31-34]; and

(b) a composition comprising an organic acid (= citric acid) [col. 3, lines 62-65] and a non-ionic polymer mixed with said organic acid, said non-ionic polymer selected from the group consisting of an alkoxyated alcohol (= α or β -naphthol ethoxylate) [col. 4, lines 32-35], an alkoxyated amine, and an alkylphenol alkoxyate,

said electrolyte bath further comprising an anode (= a counter electrode to the cathode) [col. 4, line 27] to carry out a metal electroplating in said electrolyte solution (col. 11, claim 1) on a substrate (= ceramic chip electronic components) [col. 5, lines 35-38].

The organic acid is selected from the group consisting of citric acid and acetic (= citric acid) [col. 3, lines 62-65].

The composition is present in said electrolyte solution in a concentration of about 5% by weight (= the complexing agent is at least about 0.05 mol/L + the concentration of the brightener is at least about 0.01 g/L) [col. 3, line 66 to col. 4, line 11; and col. 4, lines 36-40].

The non-ionic polymer has a molecular weight of less than 1,000 (= α or β -naphthol ethoxylate) [col. 4, lines 32-35].

The organic acid is present in said composition in a wt.% of about 10, and wherein said non-ionic polymer is present in said composition in a wt.% of about 5 (= the complexing agent is at least about 0.05 mol/L + the concentration of the brightener is at least about 0.01 g/L) [col. 3, line 66 to col. 4, line 11; and col. 4, lines 36-40].

The non-ionic polymer is present in said composition in a quantity of from about 0.5 to about 10 wt.% (= the concentration of the brightener is at least about 0.01 g/L) [col. 4, lines 36-40].

The organic acid is present in said composition in a quantity of from about 2 to about 20 wt.% (= the complexing agent is at least about 0.05 mol/L) [col. 3, line 66 to col. 4, line 11].

The bath of Motoki differs from the instant invention because Motoki does not disclose the following:

a. Wherein said composition is disposed as a suspended layer within said electrolyte solution, said suspended layer of sufficient dimension to form a wetting layer on a substrate as said substrate is passed through said suspended layer into said electrolyte solution, as recited in claim 1.

The invention as a whole would have been anticipated and/or obvious to one having ordinary skill in the art at the time the invention was made because the intended result of a process step does not compositionally distinguish the bath from the prior art (MPEP § 2112(III)).

Furthermore, if the composition is physically the same, it must have the same properties. Products of identical chemical composition can not have mutually exclusive properties. A chemical composition and its properties are inseparable (MPEP § 2112.01(II)).

b. Wherein said suspended layer spans said electrolyte solution bath container, as recited in claim 1.

The invention as a whole would have been anticipated and/or obvious to one having ordinary skill in the art at the time the invention was made because the bath disclosed by Motoki is a liquid, and liquids naturally have the ability to flow and to take on the shape of a container.

V. Claim 1 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative,

under 35 U.S.C. 103(a) as obvious over **Gomes et al.** (US Patent No. 5,250,105).

Gomes teaches an electrolyte bath, comprising:

- (a) a metal electroplating electrolyte solution (col. 4, lines 57-60); and
- (b) a composition comprising an organic acid (= a lower molecular weight organic acid) [col. 4, lines 61-68; and col. 7, lines 45-50] and a non-ionic polymer mixed with said organic acid, said non-ionic polymer selected from the group consisting of an alkoxyated alcohol (= alcohol ethoxylates) [col. 8, line 18], an alkoxyated amine, and an alkylphenol alkoxyate.

The bath of Gomes differs from the instant invention because Gomes does not disclose the following:

- a. Wherein said electrolyte solution is contained in an electrolyte bath container, as recited in claim 1.

The invention as a whole would have been anticipated and/or obvious to one having ordinary skill in the art at the time the invention was made because the container is not a chemical structure of the bath and does not compositionally distinguish the bath from the prior art (MPEP § 2112(III)).

Furthermore, Gomes teaches that the substrate may be contacted with the composition (col. 9, lines 33-36). One having ordinary skill in the art can reasonably conclude that the composition was contained in a bath container if it was to be contacted with the substrate.

b. Wherein said composition is disposed as a suspended layer within said electrolyte solution, said suspended layer of sufficient dimension to form a wetting layer on a substrate as said substrate is passed through said suspended layer into said electrolyte solution, as recited in claim 1.

The invention as a whole would have been anticipated and/or obvious to one having ordinary skill in the art at the time the invention was made because the intended result of a process step does not compositionally distinguish the bath from the prior art (MPEP § 2112(III)).

Furthermore, if the composition is physically the same, it must have the same properties. Products of identical chemical composition can not have mutually exclusive properties. A chemical composition and its properties are inseparable (MPEP § 2112.01(II)).

c. Wherein said suspended layer spans said electrolyte solution bath container, as recited in claim 1.

The invention as a whole would have been anticipated and/or obvious to one having ordinary skill in the art at the time the invention was made because the composition disclosed by Gomes is a liquid, and liquids naturally have the ability to flow and to take on the shape of a container.

d. Wherein said electrolyte bath further comprises an anode to carry out an

electroplating process in said electrolyte solution on said substrate comprising said wetting layer, as recited in claim 1.

The invention as a whole would have been anticipated and/or obvious to one having ordinary skill in the art at the time the invention was made because the anode does not compositionally distinguish the bath from the prior art (MPEP § 2112(III)). How does the anode formulate the bath solution?

RE: REMARKS

Applicants state that the Examiner has not established that the modified fatty alcohols (including ethylene and propylene oxide) of Meine et al. is equivalent to any one of Applicants' non-ionic polymers, but even assuming arguendo, such is the case, such a fact does not help Examiner in attempting to modify the non-analogous art of Meine to achieve Applicants' invention while ignoring the structural elements of Applicants' claims.

Applicants state that the Examiner has not established any reasonable basis in fact to reasonably support that the modified fatty alcohols (including ethylene and propylene oxide) of Meine et al. are substantially identical, to any one of Applicants' non-ionic polymers.

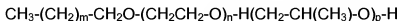
Applicants state that the Examiner further argues in response that "the PO/EO and EO are alkoxylates and the fatty acids are alcohols. Thus Meine teaches alkoxylated alcohols". Thus, Examiner illogically argues that "A is disclosed and B is

disclosed; therefore C is disclosed".

In response, Applicants recite "an alkoxyated alcohol" (claim 1, lines 7-8; and claim 9, line 9).

Meine teaches a C₁₀₋₁₄ fatty alcohol + 1 PO + 1 EO ether (col. 2, lines 25-26).

A C₁₀₋₁₄ fatty alcohol + 1 PO + 1 EO ether has the chemical structure of:



$$m = 10-14, n=2-19, p= 0-10$$

which is an alkoxyated alcohol and has a molecular weight of less than 1,000 as taught by INEOS Oxide (www.ineosoxide.com, pages 3-4, "Alcohol ethoxylates").

A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering the problem (MPEP 2141.01(a)).

If the Examiner has found that certain claim limitations did not distinguish the present invention over the prior art, the Examiner must have considered those claim limitations in order to make those finds. This means that the Examiner did not ignore the structural elements of Applicants' claims.

Applicants state that the Examiner erroneously asserts that Meine et al. discloses a suspended layer within said electrolyte solution. Applicants respectfully request Examiner to explain how the stacked immiscible layers of Meine et al. disclose or

suggest "wherein said composition is disposed as a suspended layer within said electrolyte solution".

In response, Meine teaches that one or more continuous phases of a composition may also ***contain parts of another phase*** in emulsified form so that, in a composition such as this, phase I for example is partly present as continuous phase I, which represents the lower continuous phase of the composition, and ***is partly emulsified as discontinuous phase I in the upper continuous phase II*** (col. 3, lines 10-22).

The discontinuous phase I in the upper phase II would have been a suspended layer within the solution.

Applicants state that the Examiner erroneously asserts that Meine et al. discloses a suspended layer of sufficient dimension to form a wetting layer on a substrate and claims such is inherent. Since Meine et al. nowhere disclose or suggest Applicants' suspended layer, neither is the dimension disclosed or inherent.

In response, Meine discloses a suspended layer, i.e., the discontinuous phase I in the upper continuous phase II (col. 3, lines 10-22).

Claim 1, lines 11-12, recites "said suspended layer of sufficient dimension". Since there is no specific value associated with the "sufficient dimension" recited in the claims, the claims are open to read on the dimension of the discontinuous phase I in the upper continuous phase II.

Applicants respectfully request that the Examiner to provide support in the case law or the MPEP for ignoring the plain meaning of Applicants' apparatus claims and for ignoring the structural features of Applicants' apparatus claims, and for treating Applicants' claims as a composition claim, despite repeated clarifications from Applicants.

Applicants state that the Examiner nowhere cites any support for the notion that the structural features of Applicants' apparatus claims can be ignored, as Examiner attempts to do by ignoring the structural elements of Applicant invention and insisting on treating Applicants' claims as only claiming a composition. Applicants respectfully assert that they are entitled to have all the features of their invention considered.

In response, in a telephone call from the Examiner to Randy W. Tung on August 8, 2008, Mr. Tung said that the elected claims are directed to a composition.

Are the above statements saying that the elected claims are apparatus claims? If so, then please make it clear in the preambles of claims 1 and 9 that the claims are apparatus claims by amending "An electrolyte bath" in claims 1 and 9, line 1, respectively, to -- An electrochemical plating (ECP) system -- (see Applicants' specification, pages 12-13, [0030]) for claiming an apparatus invention.

As to Applicants' repeated clarifications, what Applicants argue is one thing and what is claimed is another. Since the claim language is unclear to the Examiner as to whether the present invention is a solution (formulation/ composition) invention or an apparatus invention, the Examiner has examined the present invention as a solution

(formulation/ composition) invention because in the art, a "bath" is an aqueous solution (Bokisa , col. 2, lines 66-67) or a formulation (Motoki, col. 3, lines 48-50). It is well settled that unpatented claims are given the broadest, most reasonable interpretation and that limitations are not read into the claims without a proper claim basis therefor. *In re Prater* 415 F. 2d 1393, 162 USPQ 541 (CCPA 1969); *In re Zeltz* 893 F. 2d 319, 13 USPQ 1320. The Examiner cites MPEP § 2112.01(II) since composition claims are based on the chemical structure.

If the Examiner has found that certain claim limitations did not distinguish the present invention over the prior art, the Examiner must have considered those claim limitations in order to make those finds. This means that the Examiner did not ignore the structural elements of Applicants' claims.

Applicants state that in addition, Examiner ignores the fact that by modifying the cleaning solution of Meine et al. to produce Applicants' metal electroplating solution in an effort to reproduce Applicants' invention would change the principle of operation of the cleaning solution of Meine et al. (two immiscible stacked phases of a cleaning solution) and make the cleaning solution of Meine et al. unsuitable for its intended purpose (cleaning including temporarily forming an emulsion of only the two immiscible phases).

In response, Meine teaches that the composition is disposed as a suspended layer within the electrolyte solution (= one or more continuous phases of a composition

may also contain parts of another phase in emulsified form so that, in a composition such as this, phase I for example is partly present as continuous phase I, which represents the lower continuous phase of the composition, and ***is partly emulsified as discontinuous phase I in the upper continuous phase II***) [col. 3, lines 10-22],

The discontinuous phase I in the upper phase II would have been a suspended layer within the solution.

The Applicant has a different reason for, or advantage resulting from doing what the prior art relied upon has suggested, it is noted that it is well settled that this is not demonstrative of nonobviousness. *In re Kronig* 190 USPQ 425, 428 (CCPA 1976); *In re Linter* 173 USPQ 560 (CCPA 1972); the prior art motivation or advantage may be different than that of Applicants while still supporting a conclusion of obviousness. *In re Wiseman* 201 USPQ 658 (CCPA 1979); *Ex parte Obiaya* 227 USPQ 58 (Bd. of App. 1985) and MPEP § 2144.

Citations

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Arcilesi (US Patent No. 3,751,289) is cited to teach a copper strike bath comprising an ethoxylated propoxylated lauryl alcohol (MW 1020) [col. 10, Example 1].

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to EDNA WONG whose telephone number is (571) 272-1349. The examiner can normally be reached on Mon-Fri 7:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Edna Wong/
Primary Examiner
Art Unit 1795

EW
November 26, 2008